

Effective Date: March 2022
REF NO.:AK22/0090/HEXANE

HEXANE

1. Chemical Product and Company Identification

Product Identification:

Hexane

Chemicals Name:

Naphtha (Petroleum), Hydrotreated Light

Other Trade Name:

N-HEXANE, SOLVENT N-HEXANE (AM-HE001/T18L/C01)

Manufacturer/Supplier:

Aik Moh Paints & Chemicals Pte Ltd
20 TUAS STREET, SINGAPORE 638457
Tel : 6863 1993 Fax : 6863 8033
Website : www.aikmoh.com.sg

2. Hazards Identification

GHS Classification

Flammable liquids	2
Skin irritation	2
Reproductive toxicant (fertility)	2
Specific target organ toxicity (central nervous system)	3
Specific target organ toxicity (repeated exposure)	2
Aspiration toxicant	1
Chronic aquatic toxicant	2

GHS Label Elements



Signal words: Danger

Physical hazards:

Hazard classification:
H225 - Highly flammable liquid and vapour

Health hazards:

Hazard classification:
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary Statement(s):

Prevention

P281 - Use personal protective equipment as required.

Response

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P362 - Take off contaminated clothing and wash before reuse.

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3. Composition Information on Ingredients

This material is defined as a substance.

Hazardous Substance(s) or Complex Substance(s)

Name	CAS No.	Concentration*	GHS Hazard Codes
Naphtha (Petroleum), Hydrotreated Light	64742-49-0	100%	H225, H304, H336, H361(F), H315, H373, H411

Hazardous Constituent(s) Contained in Complex Substance(s) required for disclosure

Name	CAS No.	Concentration*	GHS Hazard Codes
Cyclohexane	110-82-7	1.0 – 3.0%	H225, H304, H336, H315, H4441
Hexane (Mixture of Isomers)	ECL N-HEXANE	30.0 – 55.0%	H225, H304, H336, N-HEXANE H315, H4441
n-Hexane	110-54-3	44.0 – 70.0%	H225, H304, H336, H361(F), H315, H373, H411

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-Aid Measures

Inhalation: Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Eye Contact: Flush thoroughly with water. If irritation occurs, get medical assistance.

Skin Contact: Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.

Ingestion: Seek immediate medical attention. Do not induce vomiting.

Note to Physician: If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. This light hydrocarbon material, or a component, may be associated with cardiac sensitisation following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart stimulating substances like epinephrine. Administration of such substances should be avoided.

Pre-existing Medical conditions which may be aggravated by Exposure: Contains hexane; individuals with pre-existing neurological disease should avoid exposure.

5. Fire Fighting Measures

Appropriate Extinguishing Media: Use foam, dry chemical, or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water.

Fire Fighting Instructions: Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop a leak. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Highly flammable. Vapour is flammable and heavier than air. Vapour may travel across the ground and reach remote ignition sources, causing a flashback fire danger.

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Hazardous Combustion Products: Smoke, Fume, Incomplete combustion products, Oxides of carbon.

6. Accidental Release Measures

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Protective Measures: Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders. For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H₂S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

Spill Management

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapour-suppressing foam may be used to reduce vapour. Use clean non-sparking tools to collect absorbed material. Large Spills: Water spray may reduce vapour, but may not prevent ignition in enclosed spaces.

Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

Environmental Precautions for Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

7. Handling and Storage

Handling: Avoid breathing mists or vapour. Avoid contact with skin. Prevent exposure to ignition sources, for example use nonsparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapour may be evolved from heated or agitated material. Use only with adequate ventilation. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Loading/Unloading Temperature: [Ambient]

Transport Temperature: [Ambient]

Transport Pressure: [Ambient]

Static Accumulator: This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

Storage: Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. The container choice, for example storage vessel, may effect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Storage containers should be earthed and bonded. Fixed storage containers, transfer containers and associated equipment should be earthed and bonded to prevent accumulation of static charge.

Storage Temperature: [Ambient]

Storage Pressure: [Ambient]

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Suitable Containers/Packing: Tank Trucks; Railcars; Barges; Drums

Suitable Materials and Coatings: Carbon steel; Stainless steel; Polyethylene; Polypropylene; Polyester; Teflon

Unsuitable Materials and Coatings: Natural rubber; Butyl rubber; Ethylene-propylene-diene monomer (EPDM); Polystyrene

8. Exposure Controls/Personal Protection

Exposure Limit Values:

Exposure Limits/Standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard			Note	Source	Year
Cyclohexane		TWA	1030 mg/m ³	300 ppm		Singapore PELs	2006
Cyclohexane		TWA	100 ppm			ACGIH	2011
Hexane (Mixture of Isomers)		STEL	3500 mg/m ³	1000 ppm		ACGIH	2011
Hexane (Mixture of Isomers)		TWA	1760 mg/m ³	500 ppm		ACGIH	2011
n-Hexane		TWA	176 mg/m ³	50 ppm		Singapore PELs	2011
n-Hexane		TWA	50 ppm		Skin	ACGIH	2011
Naphtha (petroleum), Hydrotreated Light	Vapour	RCP - TWA	300 mg/m ³	85 ppm	Total Hydrocarbons	ExxonMobil	2010

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

Engineering Controls: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. **Control measures to consider:** Adequate ventilation should be provided so that exposure limits are not exceeded. Use explosion-proof ventilation equipment.

Personal Protection: Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. **Types of respirators to be considered for this material include:** Half-face filter respirator. Type A filter material.

For high airborne concentrations, use an approved supplied- air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. **The types of gloves to be considered for this material include:** chemical resistant gloves are recommended. Nitrile.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. **The types of clothing to be considered for this material include:** Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Environmental Controls: See Sections 6, 7, 12, 13.

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9. Physical and Chemical Properties

Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications.

General Information:

Physical State: Liquid
 Form: Clear
 Colour: Colourless
 Odour: Mild petroleum/solvent
 Odour Threshold: N/D

Important, Health, Safety and Environmental Information:

Relative Density (at 15 °C): 0.68
 Density (at 15 °C): 677 kg/m³ (5.65 lbs/gal, 0.68 kg/dm³)
 Flammability (Solid, Gas): N/A
 Flash Point [Method]: < -18 °C (0 °F) [ASTM D-56]
 Flammable Limits (Approximate Volume % in Air): LEL: 1.2 UEL: 8.3
 Autoignition Temperature: 280 °C (536 °F)
 Boiling Point/Range: 64 °C (147 °F) - 70 °C (158 °F)
 Vapour Density (Air = 1): 2.9 at 101 kPa [Calculated]
 Vapour Pressure: 17.6 kPa (132 mm Hg) at 20 °C | 37.2 kPa (279 mm Hg) at 38 °C | 58 kPa (435 mm Hg) at 50 °C
 Evaporation Rate (n-Butyl Acetate = 1): 14
 pH: N/A
 Log Pow (n-Octanol/Water Partition Coefficient): N/D
 Solubility in Water: Negligible
 Viscosity: 0.44 cSt (0.44 mm²/sec) at 40 °C | 0.48 cSt (0.48 mm²/sec) at 25 °C
 Oxidising Properties: See Hazards Identification Section.

Other Information:

Freezing Point: < -60 °C (-76 °F)
 Melting Point: N/D
 Molecular Weight: 86
 Hygroscopic: No
 Coefficient of Thermal Expansion: 0.00137 V/V/DEG C

10. Stability and Reactivity

Stability: Material is stable under normal conditions.

Conditions to Avoid: Avoid heat, sparks, open flames and other ignition sources.

Materials to Avoid: Strong oxidizers.

Hazardous Decomposition Products: Material does not decompose at ambient temperatures.

Hazardous Polymerization: Hazardous polymerization will not occur.

11. Toxicological Information

Acute Toxicity

Route of Exposure	Conclusion/ Remarks
Inhalation	

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Toxicity: Data available Irritation: No end point data	Minimally Toxic. Based on available literature. Negligible hazard at ambient/normal handling temperatures. Based on available literature.
Ingestion Toxicity: LD50 > 15000 mg/kg	Minimally Toxic. Based on available literature.
Skin Toxicity: LD50 > 2000 mg/kg Irritation: Data available.	Minimally Toxic. Based on available literature. Mildly irritating to skin with prolonged exposure. Based on available literature
Eye Irritation: No end point data.	May cause mild, short-lasting discomfort to eyes. Based on available literature.

Other Health Effects from Short and Long Term Exposure: Anticipated health effects from sub-chronic, chronic, respiratory or skin sensitization, mutagenicity, reproductive toxicity, carcinogenicity, target organ toxicity (single exposure or repeated exposure), aspiration toxicity and other effects based on human experience and/or experimental data.

For the Product Itself: Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Very high exposure (confined spaces/abuse) to light hydrocarbons may result in abnormal heart rhythm (arrhythmias). Concurrent high stress levels and/or coexposure to high levels of hydrocarbons (above occupational exposure limits), and to heart-stimulating substances like epinephrine, nasal decongestants, asthma drugs, or cardiovascular drugs may initiate arrhythmias.

Contains: An ingredient or ingredients that are classified as toxic to a specific target organ from a repeated exposure. N-HEXANE: Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown.

IARC Classification: The Following Ingredients are Cited on the Lists Below: None.

REGULATORY LISTS SEARCHED

1 = IARC 1 2 = IARC 2A 3 = IARC 2B

12. Ecological Information

The information given is based on data available for the material, the components of the material, and similar materials.

Ecotoxicity: Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Mobility: Material -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Persistence and Degradability:

Biodegradation: Material -- Expected to be readily biodegradable.

Atmospheric Oxidation: Material -- Expected to degrade rapidly in air.

Other Ecological Data:

VOC: Yes

Ecological Data

Component	Acute Aquatic Toxicity
Cyclohexane	L(E)C50 > 0.1 - 1 mg/L

13. Disposal Considerations

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Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Disposal Recommendations: Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

Empty Container Warning (Where Applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

14. Transport Information

LAND

Proper Shipping Name: HEXANES
Hazard Class: 3
Hazchem Code: 3YE
UN Number: 1208
Packing Group: II
Label(s) / Mark(s): 3, EHS

SEA (IMDG)

Proper Shipping Name: HEXANES
Hazard Class & Division: 3
EMS Number: F-E, S-D
UN Number: 1208
Packing Group: II
Marine Pollutant: Yes
Label(s): 3
Transport Document Name: UN1208, HEXANES, 3, PG II, (-24°C c.c.), MARINE POLLUTANT

AIR (IATA)

Proper Shipping Name: HEXANES
Hazard Class & Division: 3
UN Number: 1208
Packing Group: II
Label(s) / Mark(s): 3
Transport Document Name: UN1208, HEXANES, 3, PG II

15. Regulatory Information

Material is hazardous as defined by Specification for Hazardous communication for hazardous chemicals and dangerous goods (Singapore Standard SS586) Part 2:2008 - Globally harmonised system of classification and labelling of chemicals - Singapore's adaptation.

Regulatory Status and Applicable Laws and Regulations

Complies with the following national/regional chemical inventory requirements: KECI, PICCS, AICS, DSL, IECS, ENCS, TSCA
Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
MPA (Dangerous Goods, Petroleum and Explosives) Regulations
Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations

16. Other Information

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N/D = Not determined, N/A = Not applicable

NOTICE: AIKMOH urges each customer or recipient of this GHS SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this GHS SDS and any hazards associated with the product. This information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subjected to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that its activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of this product are not under the control of AikMoh, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific GHS SDS, AikMoh cannot be responsible for SDS obtained from any source other than AikMoh. If you have obtained an AikMoh GHS SDS from a non-AikMoh source or if you are not sure that an AikMoh GHS SDS is current, please contact AikMoh for the most current version.